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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,829	02/06/2002	Shinya Matsuoka	MS1-1095USC1	9607

22801 7590 05/03/2007

LEE & HAYES PLLC
421 W RIVERSIDE AVENUE SUITE 500
SPOKANE, WA 99201

EXAMINER	
BASHORE, WILLIAM L	
ART UNIT	**PAPER NUMBER**
2176	

NOTIFICATION DATE	DELIVERY MODE
05/03/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lhptoms@leehayes.com

Office Action Summary	Application No.	Applicant(s)	
	10/068,829	MATSUOKA ET AL.	
	Examiner	Art Unit	
	William L. Bashore	2176	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-15,19-22,24,25 and 31-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-15,19,20,24 and 31-34* is/are rejected.

7)☒ Claim(s) *21,22 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: amendment filed 1/12/2007, to the original application filed 2/6/2002, drawings filed 3/25/2002. The present application is a continuation (filed under 37 CFR 1.53(b)) of parent case 08/900,421 (now abandoned). Said parent case filed **7/25/1997**.

2. Claims 1, 3-15, 19-22, 24, 25, 31-34 pending. Claims 1, 14, 19, 20 are independent claims.

Allowable Subject Matter

3. **Claims 21, 22, and 25 are objected to** as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 103

4. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 6-13, 16-17, 19, 23-24, 26, 28, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson et al. (hereinafter Mendelson), U.S. Patent No. 5,754,783 issued May 1998, in view of Durward et al. (hereinafter Durward), U.S. Patent No. 5,950,202 issued September 1999, and in view of Nielsen (hereinafter Nielsen), U.S. Patent No. 5,805,153 issued September 1998.

In regard to independent claims 1, and 26, Mendelson teaches interleaving (i.e. synchronizing) timed primary and untimed secondary data streams at a server, said resulting stream(s) eventually transported to clients for display (Mendelson Abstract, column 4 lines 18-22, column 8 lines 15-20). Mendelson defines timed primary content data as games, movies, audio music, etc., acquired and stored in a storage device (hard drive) on said server (Mendelson column 1 lines 13-22, column 6 lines 8-11, Figure 4 item 421). Mendelson defines untimed secondary content as video text, graphic images, private data such as files, databases, or stuffing bits, etc. (Mendelson column 1 lines 24-28, column 3 lines 50-54, column 6 lines 23-26, Figure 4 item 414). It is noted that any number of data streams can be utilized (Mendelson column 4 lines 54-58).

Mendelson does not specifically teach motion "*capture*" data. However, Durward teaches a virtual reality database for coordinating a three-dimensional virtual space (Durward Abstract). Since communication of changed reference motion data is essentially real-time (Durward Figures 1, 4), said motion data stream is captured accordingly. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Durward to Mendelson, providing the benefit of motion data capture for a realistic virtual reality experience.

Mendelson does not specifically disclose "*motion*" type data. However, Mendelson's secondary content (video text/images etc.) can at least be interpreted as suggestive of motion data since it is displayed as a video/movie type stream. In addition, Mendelson's secondary content can also comprise "padding", null/stuffing data, interleaved via a stuffing buffer, helping to preserve the quality (i.e. motion – wander, jitter, etc.) of the timed primary data (Mendelson column 2 lines 50-67, column 3 lines 9-20, 50-54, column 8 lines 14-17, Figure 4 item 440). It would have been obvious to one of ordinary skill in the art at the time of the invention to interpret Mendelson's secondary data as a type of "motion" data, providing the benefit of controlling/minimizing possible timed motion related problems (i.e. wandering, jittering, etc.) of the primary content (compare the above two paragraphs with claim 1 "*A method of synchronizing asynchronous time-based and motion data in a system in which the time-based data and the motion data are transmitted by a server over a network to a client, the method comprising*", and "*retrieving a time-based data stream and a motion data stream at the server...*")

Mendelson teaches receiving various time-based and motion data at a server, as explained above. In addition, since Mendelson discloses typical timed and untimed content within a frames environment (Mendelson column 1 lines 17-18, 24-25), combined with Mendelson's teaching of using the MPEG standard (typically applied to MPEG files, which are frame-based) (Mendelson column 4 lines 48-52), Mendelson's data streams can be interpreted as frame based (compare with claim 1 "... *each stream comprising frames of data*").

Mendelson teaches variable buffering (at a server) by measuring the bit rate stream, and buffers via the use of variable usage (interleaving) of primary, secondary and stuffing content buffers (Mendelson column 6 lines 62-67, column 8 lines 6-20, Figure 4 items 440, 450, 460). It is noted that each type of content has its own buffer, and are regulated accordingly. It is noted that Mendelson's resulting data stream can be interpreted as comprising at least two interleaved streams (now custom synchronized) of various data types. In addition, multiple elementary streams within a transport stream can be utilized (Mendelson column 4 lines 54-63, column 6 lines 4-8) (compare with claim 1 "*variable buffering one of the time-based data stream and the motion data stream at the server to produce two streams having synchronized frames*").

Mendelson teaches transport of a final (custom synchronized) stream(s) to customers (clients) for eventual playback (Mendelson column 6 lines 4-8, column 8 lines 10-12; compare with claim 1 "*using the synchronized frames at the client for playback of synchronized motion and time-based data to a user.*").

Mendelson does not specifically teach receiving separately the two streams at the client. However, Nielsen teaches receiving at the client two separate streams of data (video stream, and a subtitle stream), which are processed accordingly (Nielsen Abstract, column 1 lines 37-57, column 2 lines 52-59). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Nielsen's receiving of separate streams to Mendelson's time data and motion data (or in the alternative, Mendelson's time data and Durward's motion data), providing Mendelson/Durward the benefit of receiving separate streams so as to facilitate adjustment of motion data independently from the timed data (see Nielsen Abstract – at bottom, also column 5 lines 55-61).

In regard to dependent claim 6, Mendelson teaches secondary data as stuffing data, or as private data such as files or databases (see rejection of claim 1, also Mendelson column 6 lines 24-26). Mendelson does not specifically teach said motion data mapped to control movement of a virtual figure displayed in a scene at the client. However, Durward teaches a method whereby updated positional data from a person's head position sensor is mapped and used to determine the position of a virtual being defined for that user, communicating graphical data to the user via database data (Durward, column 6 lines 29-32, 46-52, column 7 lines 12-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the virtual position database data of Durward to Mendelson's secondary database data, providing Mendelson increased spatial imagery to the multimedia stream.

In regard to dependent claim 7, Mendelson does not specifically teach using a body suit for generating motion data. However, Durward teaches a method of sensing position data with the use of a body suit (Durward, column 3 line 25-33). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Durward to Mendelson, providing Mendelson the benefit of three dimensional physical contour mapping, providing increased spatial image accuracy to Mendelson's video stream method.

In regard to dependent claim 8, Mendelson teaches primary content (video, audio data, etc.) as well as secondary content (video text, images, files, database data, along with "stuffing" data, etc.) as explained in the rejection of claim 1. As the resulting interleaved stream(s) is played back on a client, any combination of foreground/background combination can be typically specified, (i.e. the primary data (i.e. a movie scene) can be run as background to the secondary/motion data controlling it, or run as background to any related database files in the foreground, etc).

In regard to dependent claims 9, 10, Mendelson teaches buffering/processing occurring at the same time the program is being transported to customer equipment (Mendelson column 8 lines 9-12; compare with claim 9).

Mendelson teaches audio (i.e. voice) data (Mendelson column 4 lines 57-59; compare with claim 10).

In regard to dependent claim 11, Mendelson teaches an embodiment using streams associated with data channels (Mendelson column 6 lines 1-8).Mendelson also teaches a header packet (a descriptor packet), said header typically used to describe data within transport stream data (i.e. each 188 byte packet) (Mendelson column 4 lines 47-53, Figure 2).

Mendelson does not specifically teach that a client may join in progress a multicasting of a stream. However, Durward teaches virtual reality presentations where a number of contributing user's data is collected and analyzed accordingly, so a to facilitate multicasting (and interaction between figures) of the virtual world to various users (Durward Figures 4-6, 7 column 8 lines 5-15). Durward also teaches users logging on to a system via modems, said users data is shared with other users and continuously updated so as to create a virtual reality world (Durwald, column 8 lines 22-24, 41-64, Figure 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Durward to Mendelson, providing Mendelson the benefit of multicasting associated with synchronization of streams.

In regard to dependent claims 12, 13, Mendelson teaches buffering of streams comprising buffering of primary and secondary content (said primary content can be audio data, Mendelson column 4 lines 57-59), along with necessary interleaved motion type data (secondary/stuffing data), producing a sequenced synchronized stream regarding constant verses variable bit stream rate (see also rejection of claim 1, also Mendelson column 6 lines 62-67).

In regard to independent claims 16 and 28, claims 16 and 28 reflect the apparatus used to perform the methods comprising computer readable instructions as claimed in claim 1, and in further view of the following, is rejected along the same rationale.

Mendelson does not specifically teach motion "*three dimensional*" data stream. However, Durward teaches a virtual reality database for coordinating a three-dimensional virtual space (Durward Abstract). Since communication of changed reference motion data is essentially real-time (Durward Figures 1, 4), said motion data stream is captured accordingly and is associated with 3D data. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Durward to Mendelson, providing the benefit of motion data 3D capture for a realistic virtual reality experience.

In regard to dependent claim 17, Mendelson does not specifically teach an apparatus whereby synchronized motion/time-based data is milticasted to clients in a network. However, Durward teaches an apparatus whereby users log on to a system via modems, said users data is shared with other users and continuously updated so as to create a virtual reality world (Durward, column 8 lines 22-24, 41-64, Figure 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the data sharing method of Durward to Mendelson, providing Mendelson the benefit of continuous updating and increased uniform user awareness in a virtual environment.

In regard to independent claims 19 and 29, claims 19 and 29 incorporate substantially similar subject matter as claimed in claim 1, and in further view of the following, is rejected along the same rationale.

Mendelson does not specifically teach motion "*capture*" data. However, Durward teaches a virtual reality database for coordinating a three-dimensional virtual space (Durward Abstract). Since communication of changed reference motion data is essentially real-time (Durward Figures 1, 4), said motion data stream is captured accordingly. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Durward to Mendelson, providing the benefit of motion data capture for a realistic virtual reality experience.

Mendelson teaches secondary data as stuffing data, or as private data such as files or databases (see rejection of claim 1, also Mendelson column 6 lines 24-26). Mendelson does not specifically teach said motion data mapped to control movement of a virtual figure displayed in a scene at the client, along with synchronization. However, Durward teaches a method whereby updated positional data from a person's head position sensor is mapped and used to determine the position of a virtual being defined for that user, communicating graphical data to the user via database data (Durward, column 6 lines 29-32, 46-52, column 7 lines 12-20). Since the playback of Mendelson's resulting stream synchronizes the secondary data with the primary content, the primary data (i.e. video) can be synchronized with added secondary database data (related to a virtual figure). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the virtual position database data of Durward to Mendelson's secondary database data, providing Mendelson increased spatial imagery and desired synchronization to the resulting multimedia stream.

In regard to dependent claim 23, Mendelson does not specifically teach motion "*sensor*" data. However, Durward teaches a virtual reality database for coordinating a three-dimensional virtual space (Durward Abstract). Since communication of changed reference motion data is essentially real-time via sensor helmets (Durward Figures 1, 4), said motion data stream is captured via sensors accordingly. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Durward to Mendelson, providing the benefit of motion data capture for a realistic virtual reality experience.

In regard to dependent claim 24, Mendelson does not specifically teach motion "*sensor*" data. However, Durward teaches a virtual reality database for coordinating a three-dimensional virtual space (Durward Abstract). Since communication of changed reference motion data is essentially real-time via sensor helmets (Durward Figures 1, 4), said motion data stream is captured via sensors accordingly. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Durward to Mendelson, providing the benefit of motion data capture for a realistic virtual reality experience.

6. **Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable Mendelson, Durward, and Nielsen as applied to claim 1 above, and further in view of Baumgartner et al. (hereinafter Baumgartner), U.S. Patent No. 5,642,171 issued June 1997.**

In regard to dependent claim 3, Mendelson teaches buffering based on a calculated difference (delay) between a variable bit stream, and a constant bit stream (Mendelson column 6 lines 62-67). Mendelson does not specifically teach a difference between the delay for motion and time-based data stream to determine buffering for a faster stream. However, Baumgartner teaches a method whereby a current video frame number is subtracted from a current audio frame number to determine if the audio is too far ahead of the video (Baumgartner column 13 lines 60-67, column 14 lines 1-2). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the difference calculation method of Baumgartner to Mendelson's stream analysis, providing Mendelson the benefit of more accurate time synchronization to the server buffer method disclosed by Mendelson.

7. **Claims 4, 14-15, 18, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson, Durward, and Nielsen, and further in view of Shibata, Y., Media synchronization protocols for packet audio-video system on multimedia information networks (hereinafter Shibata), IEEE; January 3-6, 1995 pp.594-601.**

In regard to dependent claim 4, Mendelson does not specifically teach transfer of data values for a frame occuring only for a frame that has changed since a last frame was transmitted. However, Shibata discloses a method whereby audio data is sent from the video server to the client station only during a "talk spurt", with constant frame rates occurring during periods of audio silence (Shibata p.597, section 4.3 "Silence detected

synchronization"). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Shibata to Mendelson's stream interleaving, providing Mendelson the benefit of file size and transmission reduction (streamlining) of the audio/video data streams.

In regard to independent claims 14 and 27, claims 14 and 27 incorporate substantially similar subject matter as claimed in claim 1, and in further view of the following, is rejected along the same rationale.

Mendelson does not specifically teach motion "*three dimensional*" data stream. However, Durward teaches a virtual reality database for coordinating a three-dimensional virtual space (Durward Abstract). Since communication of changed reference motion data is essentially real-time (Durward Figures 1, 4), said motion data stream is captured accordingly and is associated with 3D data. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Durward to Mendelson, providing the benefit of motion data 3D capture for a realistic virtual reality experience.

Mendelson teaches an embodiment using streams associated with "*data channels*" (Mendelson column 6 lines 1-8).Mendelson also teaches a header packet (a descriptor packet), said header typically used to describe data within transport stream data (i.e. each 188 byte packet) (Mendelson column 4 lines 47-53, Figure 2).

Mendelson does not specifically teach transfer of data values (channels) for a occuring only for changed data values. However, Shibata discloses a method whereby audio data is sent from the video server to the client station only during a "talk spurt", with constant frame rates occurring during periods of audio silence (i.e. a talk spurt changes the data values) (Shibata p.597, section 4.3 "Silence detected synchronization"). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Shibata to Mendelson's stream interleaving, providing Mendelson the benefit of file size and transmission reduction (streamlining) of the audio/video data streams. It is to be noted that in order to adjust frame rates as above, the server must know that a change in the data has occurred, which is typically achieved by comparing new data (the talk spurt) with the last recognized data value (previously recognized as empty – reflecting a period of silence).

In regard to dependent claim 15, Mendelson teaches an embodiment using streams associated with data channels (Mendelson column 6 lines 1-8).Mendelson also teaches a header packet (a descriptor packet), said header typically used to describe data within transport stream data (i.e. each 188 byte packet) (Mendelson column 4 lines 47-53, Figure 2).

In regard to dependent claim 18, Mendelson teaches an embodiment using streams associated with "*data channels*" (Mendelson column 6 lines 1-8).Mendelson also teaches a header packet (a descriptor packet), said header typically used to describe data within transport stream data (i.e. each 188 byte packet) (Mendelson column 4 lines 47-53, Figure 2).

Mendelson does not specifically teach transfer of data values (channels) for a occuring only for changed data values. However, Shibata discloses a method whereby audio data is sent from the video server to the client station only during a "talk spurt", with constant frame rates occurring during periods of audio silence (i.e. a talk spurt changes the data values) (Shibata p.597, section 4.3 "Silence detected synchronization"). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Shibata to Mendelson's stream interleaving, providing Mendelson the benefit of file size and transmission reduction (streamlining) of the audio/video data streams. It is to be noted that in order to adjust frame rates as above, the server must know that a change in the data has occurred, which is typically achieved by comparing new data (the talk spurt) with the last recognized data value (previously recognized as empty – reflecting a period of silence).

8. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson, Durward, and Nielsen, as applied to claims 1, above, and further in view of Katseff et al. (hereinafter Katseff), U.S. Patent No. 5,822,537 issued October 1998.**

In regard to dependent claim 5, Mendelson teaches a networking environment (Mendelson column 4 lines 28-33). Mendelson does not specifically teach using the Internet for distribution. However, Katseff teaches an internet as an example of suggested types of networks that can be used (Katseff, column 3 lines 58-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Katseff to Mendelson, providing Mendelson the benefit of a widespread and familiar network.

9. **Claims 20, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendelson, Durward, Nielsen, and Baumgartner.**

In regard to independent claims 20 and 30, claims 20 and 30 incorporate substantially similar subject matter as claimed in claims 1, 3, 10, 11, and are rejected along the same rationale.

Response to Arguments

10. Applicant presents no arguments at the present time.

Conclusion

11. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William L. Bashore whose telephone number is (571) 272-4088. The examiner can normally be reached on 11:30am - 8:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on (571) 272-4136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

William L. Bashore

WILLIAM BASHORE
PRIMARY EXAMINER

April 27, 2007